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10/599,425

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Dai Tanaka

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EXAMINER

MUSHAMBO, MARTIN

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2625

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,425	Applicant(s) TANAKA ET AL.	
	Examiner MARTIN MUSHAMBO	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-21, 23 and 25 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-21, 23 and 25 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/18/2011</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. This is a response to applicant's response filed on 04/14/2011. Claims 1-21, 23, and 25 are pending. Claims 1, 15, and 16 have been amended. Claims 1, 15, and 16 are independent.

Examiner's Note

2. Examiner has cited particular columns and line numbers or figures in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-5, 15, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori (JP 2001075950), in view of Hamaguchi (US 2004/0222984), further in view of Kim et al. (US 2005/0093772)

Regarding claim 1, Mori discloses a print buffer unit temporally storing a plurality of print data and selecting designated print data from among the plurality of print data to be printed on a printer, **(MORI, Fig.1)** comprising:

a data-inputting section receiving the plurality of print data created in a host apparatus;

(MORI, fig.8, [0004] lines 1-2, [0018] lines 1-3, [0068] lines 1-3 Figure 2 depicts a print system with a buffer unit '202' connected to a PC '201' that sends data to the printer through the buffer unit. Data are inputted through the connection) a data-

storing section storing the plurality of the print data transferred from the data-inputting

section; **(MORI, fig.1 element 110, [0013] lines 3-4, [0062] lines 5-6)** a print-image

creating section creating a print image to be printed on the printer from the designated

print data; **(MORI, [0062] lines 10-18)** and a data-outputting section transferring the

designated print data to the printer according to an instruction for printing the

designated print data after the print image of the designated print data is visually

identified. **(MORI, [0012] lines 10-11)** a print-image displaying section displaying the

print image of the designated print data on a display panel; **(MORI, [0012] lines 1-8)**

Mori does not explicitly disclose "the print-image displaying section includes a band-

data storing part that reads the designated print data, the print-image displaying section

displays less than an entirety of the print image in response to a displaying signal

generated by the band-data storing part;" However Hamaguchi discloses "the print-

image displaying section **(Hamaguchi, figure 5)** includes a band-data storing part that

reads the designated print data **(Hamaguchi, figure 5 element 2 storing part is**

graphic memory stores print data), the print-image displaying section displays less

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than an entirety of the print image in response to a displaying signal generated by the band-data storing part;" **(Hamaguchi, figure 5 element 3, [0040] lines 1-6)** It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori with the teachings of Hamaguchi since they are both analogous in image display related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori with the teachings of Hamaguchi to provide a low electric power consuming device.

(Hamaguchi, [0007] lines 7-11)

The combination of Mori and Hamaguchi does not explicitly disclose "wherein the print-image displaying section includes: a plurality of band-data areas in the display panel; a plurality of first driving circuits, each of the plurality of first driving circuits corresponding to one of the plurality of band-data areas; a second driving circuit driving electrodes common to the plurality of band-data areas; and a selector switch selecting a connection between one of the plurality of first driving circuits and the band-data storing part."

However, Kim discloses a displaying section **(Kim, fig.4B a display)** that includes: a plurality of band-data areas in the display panel **(Kim, fig.4B element 100 the display panel comprises a plurality of scan lines 'Y11-Y1n and Y21-Y2n'. The scan lines are the band data areas)**; a plurality of first driving circuits **(Kim, fig.4B element 410 and 420 first and second scan driver)**, each of the plurality of first driving circuits corresponding to one of the plurality of band-data areas; **(Kim, fig.4B the first scan driver 410 correspond to the scan line 'Y11-Y1n' and the second**

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scan driver correspond to the scan line 'Y21-Y2n') a second driving circuit driving electrodes common to the plurality of band-data areas; **(Kim, fig.4B element 200 address driver)** and a selector switch **(Kim, fig.4B element 600 the controller that control pulse to drive the scan drivers)** configured to connect any one of the plurality of first driving circuits **(Kim, fig.4B elements 410 and 420 the scan drivers)** and the band-data storing part. **(Kim, fig.4B the image signal, frame, inputted to the controller is stored in a memory)"** It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori and Hamaguchi with the teachings of Kim since they are both analogous in image display related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori and Hamaguchi with the teachings of Kim in order to prevent overheating **(Kim, [0012] lines 5-11).**

Regarding claim 2 dependent on claim 1, Mori and Hamaguchi, as modified with Kim, discloses the print buffer unit, further comprising: a print-data modifying section modifying the print data **(MORI, fig.13 element 1102).**

Regarding claim 3 dependent on claim 2, Mori and Hamaguchi, as modified with Kim, discloses the print buffer unit, wherein the print-data modifying section comprises at least one of print-sequence Kiming means for Kiming the sequence of printing of the print data, print-data duplicating means for duplicating the print data, and print-data

deleting means for deleting the print data (**MORI, [0028] lines 1-7**).

Regarding claim 4 dependent on claim 2, Mori and Hamaguchi, as modified with Klm, discloses the print buffer unit, wherein the print-data modifying section comprises print-image modifying means for modifying the print image (**MORI, fig.13 element 1102, [0039] lines 1-4 colors of the print image can be edited**).

Regarding claim 5 dependent on claim 3, Mori and Hamaguchi, as modified with Kim, discloses the print buffer unit, wherein the print-data modifying section further comprises print- image modifying means for modifying the print image (**MORI, fig.13 element 1102, [0039] lines 1-4 colors of the print image can be edited**).

Regarding claim 15, Mori discloses a print system (**Mori, fig.2**) comprising: a print buffer unit including a print-image creating section and a print- image display section, the print-image display section including a band-data storing part, and a display panel: (**MORI, Fig.1 element 201**) printable data being input to the print buffer unit; (**MORI, fig.8, [0004] lines 1-2, [0018] lines 1-3, [0068] lines 1-3 Figure 2 depicts a print system with a buffer unit '202' connected to a PC '201' that sends data to the printer through the buffer unit. Data are inputted through the connection**) and a printer (**MORI, fig.1 element 203**): wherein the print buffer unit creates a print image from the data and displays the print image on the display panel; (**MORI, [0062] lines 6-10**) wherein the print buffer unit sends the data to the printer, the data being modified so

as to Kime the print image; and wherein the printer prints on the basis of the data.

(MORI, [0012] lines 10-11, [0030] lines 1-3 printed data on paper medium is equivalent to image previewed)

Mori does not explicitly disclose “wherein the band-data storing part reads designated print data created by the print-image creating section; and wherein the print-image displaying section displays less than an entirety of the print image in response to a displaying signal created by the band-data storing part.” However Hamaguchi discloses “wherein the band-data storing part reads designated print data created by the print-image creating section **(Hamaguchi, figure 5 element 2 storing part is graphic memory stores print data)**; and wherein the print-image displaying section displays less than an entirety of the print image in response to a displaying signal created by the band-data storing part.” **(Hamaguchi, figure 5 element 3, figure 5 element 9 ‘display panel’, [0040] lines 1-6)** It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori with the teachings of Hamaguchi since they are both analogous in image display related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori with the teachings of Hamaguchi to provide a low electric power consuming device. **(Hamaguchi, [0007] lines 7-11)**

The combination of Mori and Hamaguchi does not explicitly disclose “wherein the print-image displaying section includes: a plurality of band-data areas in the display panel; a plurality of first driving circuits, each of the plurality of first driving circuits corresponding to one of the plurality of band-data areas; a second driving circuit driving electrodes

common to the plurality of band-data areas; and a selector switch selecting a connection between one of the plurality of first driving circuits and the band-data storing part.”

However, Kim discloses a displaying section **(Kim, fig.4B a display)** that includes: a plurality of band-data areas in the display panel **(Kim, fig.4B element 100 the display panel comprises a plurality of scan lines ‘Y11-Y1n and Y21-Y2n’. The scan lines are the band data areas)**; a plurality of first driving circuits **(Kim, fig.4B element 410 and 420 first and second scan driver)**, each of the plurality of first driving circuits corresponding to one of the plurality of band-data areas; **(Kim, fig.4B the first scan driver 410 correspond to the scan line ‘Y11-Y1n’ and the second scan driver correspond to the scan line ‘Y21-Y2n’)** a second driving circuit driving electrodes common to the plurality of band-data areas; **(Kim, fig.4B element 200 address driver)** and a selector switch **(Kim, fig.4B element 600 the controller that control pulse to drive the scan drivers)** configured to connect any one of the plurality of first driving circuits **(Kim, fig.4B elements 410 and 420 the scan drivers)** and the band-data storing part. **(Kim, fig.4B the image signal, frame, inputted to the controller is stored in a memory)**” It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori and Hamaguchi with the teachings of Kim since they are both analogous in image display related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori and Hamaguchi with the teachings of Kim in order to prevent overheating **(Kim, [0012] lines 5-11).**

Regarding claims 21 and 23 dependent on claim 1 and 15 respectively, the combination of Mori, Hamaguchi and Kim discloses the print buffer unit, wherein the print-image displaying section displays a whole field of the print image by repeatedly: reading the designated print data; and displaying different parts of the print image in response to receipt of different displaying signals created by the band-data storing part.

(Hamaguchi, col.6 lines 24-56 the print image data are read based on the gate lines, here scan line, and the data lines that are turned on)

6. Claims 16-20 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori and Hamaguchi, in view of Iwabuchi et al. (JP 04-094955 hereinafter referred to as Iwabuchi) cited in IDS filed on 09/28/2010, further in view of Kim et al. (US 2005/0078057)

Regarding claim 16, Mori discloses a print buffer unit **(Mori, fig.2 element 202)** comprising: an operation-inputting section including an operation switch configured to receive print buffer operational instructions input by a user of the print buffer unit; **(MORI, [0095] lines 1-9)** a data-inputting section configured to receive print data created in a host apparatus; **(MORI, fig.8, [0004] lines 1-2, [0018] lines 1-3, [0068] lines 1-3 Figure 2 depicts a print system with a buffer unit '202' connected to a PC**

‘201’ that sends data to the printer through the buffer unit. Data are inputted through the connection) a data-storing section configured to store the print data received from the data-inputting section; **(MORI, fig.1 element 110, [0013] lines 3-4, [0062] lines 5-6)** a print-image creating section operable to create a print image to be printed on the printer from the print data; **(MORI, [0062] lines 10-18)** a print-image displaying section operable to display the print image; **(MORI, [0014] lines 1-5 display control, [0015] lines 1-4)** a display panel included with the print-image displaying section configured to display the print image; **(MORI, fig.13 element 1101, [0095] lines 1-2 preview display screen)** a modification-inputting section configured to transmit instructions for modification of the print image to a print image modifying means provided in a print data modifying section configured to modify the print data; **(MORI, fig.13 element 1102)** a modification pad adjacent to the display panel that is configured to receive inputs from a user for modifying the print image; **(MORI, fig.6 element 405, fig.7 element 505, [0067] lines 5-8)** a memory for storing the print image **(MORI, fig.1 element 110);**

Mori does not explicitly disclose “a band-data storing part included with the print-image displaying section, the band-data storing part is operable to read the print data; a display panel included with the print-image displaying section configured to display less than an entirety of the print image in response to a display signal generated by the band-data storing part;” However, Hamaguchi discloses “a band-data storing part included with the print-image displaying section, the band-data storing part is operable to read the print data; **(Hamaguchi, figure 5 element 2 storing part is graphic**

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memory stores print data) a display panel included with the print-image displaying section configured to display less than an entirety of the print image in response to a display signal generated by the band-data storing part; **(Hamaguchi, figure 5 element 9 display panel)**” It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori with the teachings of Hamaguchi since they are both analogous in image display related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori with the teachings of Hamaguchi to provide a low electric power consuming device. **(Hamaguchi, [0007] lines 7-11)**

Mori and Hamaguchi do not explicitly disclose “a battery operable to power the entire print buffer unit.” However, Iwabuchi discloses “a battery operable to power the entire print buffer unit.” **(Iwabuchi, fig.1B element 1a, fig.6A element 1a, fig.19 element 47)** It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori and Hamaguchi with the teachings of Iwabuchi since they are both analogous in image processing related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori and Hamaguchi with the teachings of Iwabuchi in order to provide back up power.

The combination of Mori, Hamaguchi and Iwabuchi does not explicitly disclose “wherein the print-image displaying section includes: a plurality of band-data areas in the display panel; a plurality of first driving circuits, each of the plurality of first driving circuits corresponding to one of the plurality of band-data areas; a second driving circuit driving

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electrodes common to the plurality of band-data areas; and a selector switch selecting a connection between one of the plurality of first driving circuits and the band-data storing part.”

However, Kim discloses a displaying section **(Kim, fig.4B a display)** that includes: a plurality of band-data areas in the display panel **(Kim, fig.4B element 100 the display panel comprises a plurality of scan lines ‘Y11-Y1n and Y21-Y2n’. The scan lines are the band data areas)**; a plurality of first driving circuits **(Kim, fig.4B element 410 and 420 first and second scan driver)**, each of the plurality of first driving circuits corresponding to one of the plurality of band-data areas; **(Kim, fig.4B the first scan driver 410 correspond to the scan line ‘Y11-Y1n’ and the second scan driver correspond to the scan line ‘Y21-Y2n’)** a second driving circuit driving electrodes common to the plurality of band-data areas; **(Kim, fig.4B element 200 address driver)** and a selector switch **(Kim, fig.4B element 600 the controller that control pulse to drive the scan drivers)** configured to connect any one of the plurality of first driving circuits **(Kim, fig.4B elements 410 and 420 the scan drivers)** and the band-data storing part. **(Kim, fig.4B the image signal, frame, inputted to the controller is stored in a memory)**” It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori and Hamaguchi with the teachings of Kim since they are both analogous in image display related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori and Hamaguchi with the teachings of Kim in order to

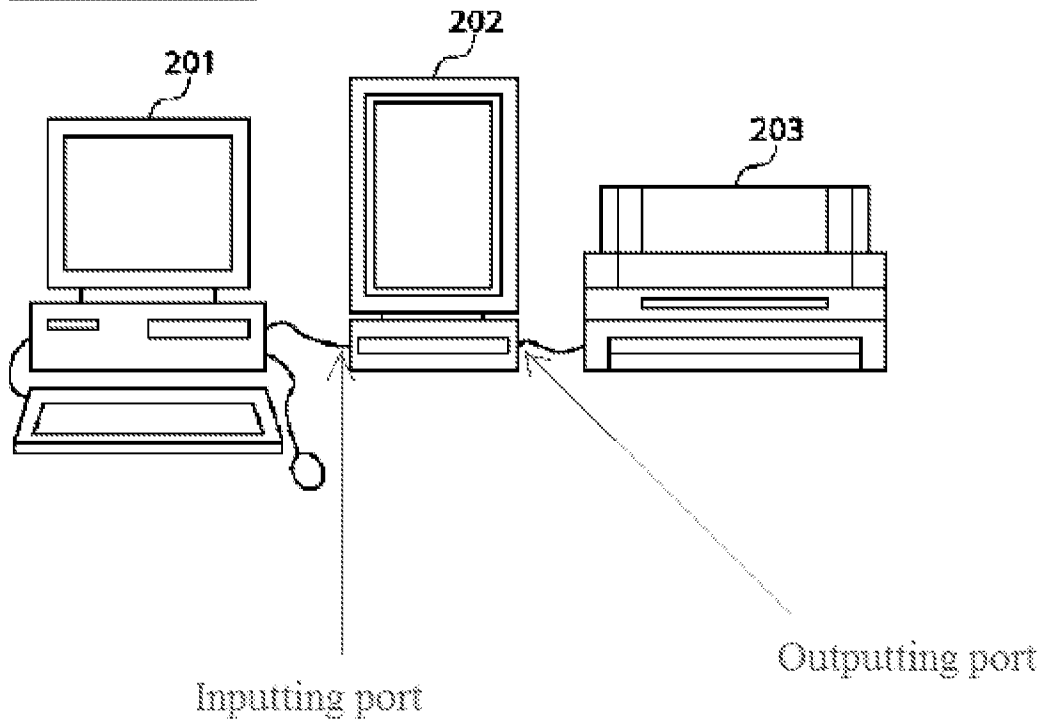
prevent overheating (**Kim, [0012] lines 5-11**).

Regarding claim 17 dependent on claim 16, Mori and Hamaguchi, as modified with Wabuchi and Kim, disclose the print buffer unit, wherein the print-data modifying section further comprises: a print-data sorting means configured to modify a sequence that the print data is printed; (**MORI, [0034] lines 1-4 reverse order, choosing even-numbered page**) a print-data duplicating means configured to duplicate the print data; (**MORI, [0034] lines 3-6 duplicating/doubling**) a print-data deleting means configured to delete the print data; (**MORI, [0125] lines 7-8**) and a print-data restoring means (**MORI, [0125] lines 8-10 correcting means**).

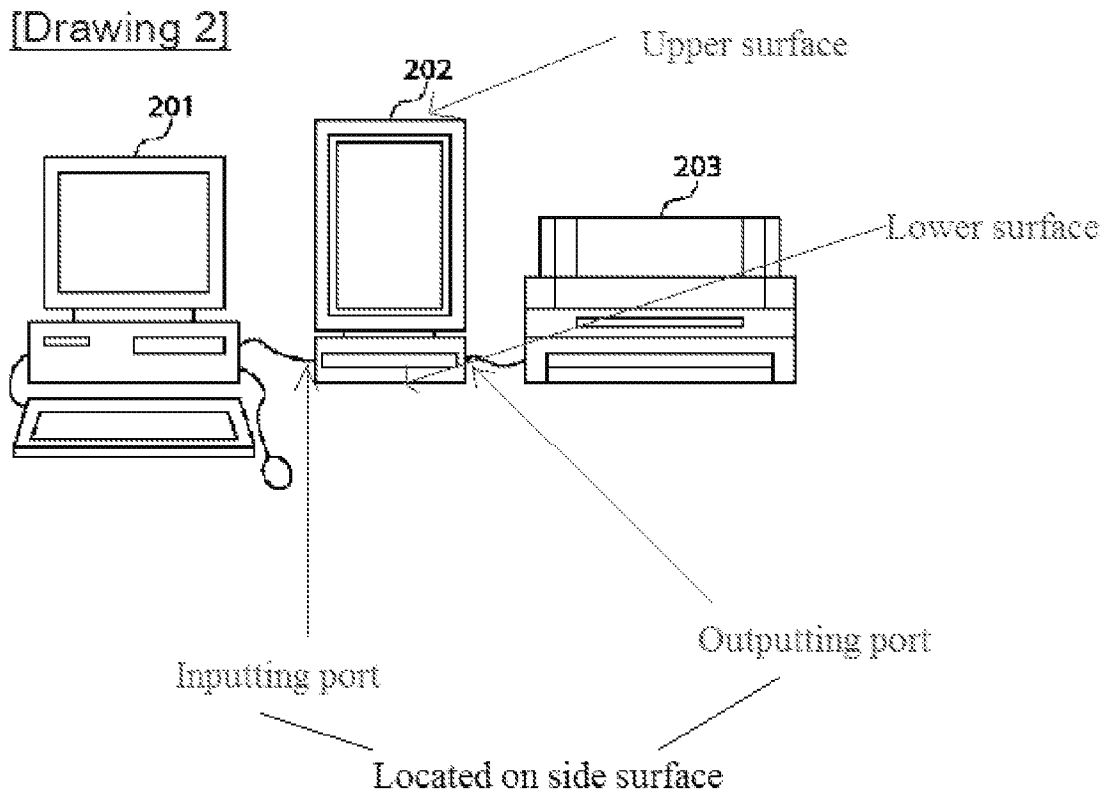
Regarding claim 18 dependent on claim 16, Mori and Hamaguchi, as modified with Wabuchi and Kim disclose the print buffer unit, wherein the print-image creating section splits the print image into at least two parts; and the print-image displaying section merges the split parts of the print image into one and displays a merged print-image. (**MORI, [0117] lines 1-9**)

Regarding claim 19 dependent on claim 16, Mori and Hamaguchi, as modified with Wabuchi and Kim disclose the print buffer unit, further comprising a data inputting port and a data outputting port. (**Mori, fig.2, see illustration below**)

[Drawing 2]



Regarding claim 20 dependent on claim 16, Mori and Hamaguchi, as modified with Wabuchi and Kim disclose the print buffer unit, further comprising a housing having an upper surface, a lower surface opposite to the upper surface, and a side surface between the upper surface and the lower surface; wherein the data inputting port and the data outputting port are located at the side surface; (**MORI, fig.2 element 202, see illustration below**)



Mori and Hamaguchi, as modified with Wabuchi, do not disclose “wherein the display panel is between the modification pad the data inputting port.” However, applicant has not disclosed any specific advantage or criticality of having the display panel between the modification pad and the data inputting port. As such, the above limitations are a matter of design choice.

Accordingly, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to have in order to make the print buffer device portable.

Regarding claim 25 dependent on claim 16, Mori and Hamaguchi, as modified with Wabuchi, disclose the print buffer unit, wherein the print-image displaying section

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displays a whole field of the print image by repeatedly: reading the designated print data; and displaying different parts of the print image in response to receipt of different displaying signals created by the band-data storing part. **(Hamaguchi, col.6 lines 24-56 the print image data are read based on the gate lines, here scan line, and the data lines that are turned on)**

7. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori and Hamaguchi, in view of Kim, further in view of Wang (US 2004/0243826).

Regarding claim 6 dependent on claim 1, Mori and Hamaguchi, as modified with Kim, do not disclose "The print buffer unit, wherein the print-image displaying section is operable to continue to display content after power supply is cut." However, Wang discloses "The print buffer unit, wherein the print-image displaying section is operable to continue to display content after power supply is cut." **(Wang, [0019] lines 1-12 maintaining means saving data or preventing data loss)** It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori and Hamaguchi, as modified with Kim, with the teachings of Wang since they are both analogous in computer data processing related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori and Hamaguchi, as modified with Kim, with the teachings of Wang in order to provide data protection during abnormal power off time. **(Wang, [0005] lines 6-9)**

Regarding claim 7 dependent on claim 2, Mori and Hamaguchi, as modified with Kim, do not disclose “The print buffer unit, wherein the print-image displaying section is operable to continue to display content after power supply is cut.” However, Wang discloses “The print buffer unit, wherein the print-image displaying section is operable to continue to display content after power supply is cut.” **(Wang, [0019] lines 1-12 maintaining means saving data or preventing data loss)** It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori and Hamaguchi, as modified with Kim, with the teachings of Wang since they are both analogous in computer data processing related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori and Hamaguchi, as modified with Kim, with the teachings of Wang in order to provide data protection during abnormal power off time. **(Wang, [0005] lines 6-9)**

Regarding claim 8 dependent on claim 3, Mori and Hamaguchi, as modified with Kim, do not disclose “The print buffer unit, wherein the print-image displaying section is operable to continue to display content after power supply is cut.” However, Wang discloses “The print buffer unit, wherein the print-image displaying section is operable to continue to display content after power supply is cut.” **(Wang, [0019] lines 1-12 maintaining means saving data or preventing data loss)** It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori and Hamaguchi, as modified with Kim, with the teachings of Wang since they are both analogous in computer data processing related field. One ordinary skilled in the art

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at the time of the invention would have been motivated to combine the teachings of Mori and Hamaguchi, as modified with Kim, with the teachings of Wang in order to provide data protection during abnormal power off time. **(Wang, [0005] lines 6-9)**

Regarding claim 9 dependent on claim 4, Mori and Hamaguchi, as modified with Kim, do not disclose “The print buffer unit, wherein the print-image displaying section is operable to continue to display content after power supply is cut.” However, Wang discloses “The print buffer unit, wherein the print-image displaying section is operable to continue to display content after power supply is cut.” **(Wang, [0019] lines 1-12 maintaining means saving data or preventing data loss)** It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori and Hamaguchi, as modified with Kim, with the teachings of Wang since they are both analogous in computer data processing related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori and Hamaguchi, as modified with Kim, with the teachings of Wang in order to provide data protection during abnormal power off time. **(Wang, [0005] lines 6-9)**

Regarding claim 10 dependent on claim 5, Mori and Hamaguchi, as modified with Kim, do not disclose “The print buffer unit, wherein the print-image displaying section is operable to continue to display content after power supply is cut.” However, Wang discloses “The print buffer unit, wherein the print-image displaying section is operable to continue to display content after power supply is cut.” **(Wang, [0019] lines 1-12)**

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maintaining means saving data or preventing data loss) It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori and Hamaguchi, as modified with Kim, with the teachings of Wang since they are both analogous in computer data processing related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori and Hamaguchi, as modified with Kim, with the teachings of Wang in order to provide data protection during abnormal power off time. **(Wang, [0005] lines 6-9)**

8. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori and Hamaguchi, in view of Kim, further in view of Tyler et al. (US 5638498) hereinafter referred to as Tyler.

Regarding claim 11 dependent on claim 1, Mori and Hamaguchi, as modified with Kim, do not disclose explicitly “The print buffer unit, wherein the print-image creating section creates the print image split into at least two parts; and the print-image displaying section merges the split parts of the print image into one and displays the print image.” However, Tyler discloses “The print buffer unit, wherein the print-image creating section creates the print image split into at least two parts; and the print-image displaying section merges the split parts of the print image into one and displays the print image.” **(Tyler, col.9 lines 44-53)** It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori and Hamaguchi, as modified with Kim with the teachings of Tyler since they are both

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analogous in print control related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori and Hamaguchi, as modified with Kim with the teachings of Tyler in order to lower memory requirement for displaying data. **(Tyler, col.2 lines 8-20).**

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori, Hamaguchi, and Kim, in view of Wang, further in view of Tyler et al. (US 5638498) hereinafter referred to as Tyler.

Regarding claim 12 dependent on claim 10, Mori, Hamaguchi, and Kim as modified with Wang do not disclose "The print buffer unit wherein the print-image creating section creates the print image split into at least two parts; and the print-image displaying section merges the split parts of the print image into one and displays the print image." However, Tyler discloses "The print buffer unit wherein the print-image creating section creates the print image split into at least two parts; and the print-image displaying section merges the split parts of the print image into one and displays the print image." **(Tyler, col.9 lines 44-53)** It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori, Hamaguchi, and Kim, as modified with Wang, with the teachings of Tyler since they are both analogous in print control related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori, Hamaguchi,

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and Kim, as modified with Wang, with the teachings of Tyler in order to lower memory requirement for displaying data. **(Tyler, col.2 lines 8-20)**

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori and Hamaguchi, in view of Kim, further in view of Applicant Admitted Prior Art hereinafter referred to as AAPA.

Regarding claim 13 dependent on claim 1, Mori and Hamaguchi, as modified with Kim, do not disclose "The print buffer unit, wherein the print buffer unit is driven by a portable power source." However AAPA discloses "The print buffer unit, wherein the print buffer unit is driven by a portable power source." **(AAPA, Specification page 1 lines 15-16)** It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori and Hamaguchi, as modified with Kim with the teachings of AAPA since they are both analogous in power driven device related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori and Hamaguchi, as modified with Kim with the teachings of AAPA in order to provide a DC back-up power to the devices.

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori, Hamaguchi, and Kim, as modified with Wang, in view of Tyler, further in view of Applicant Admitted Prior Art hereinafter referred to as AAPA.

Regarding claim 14 dependent on claim 12, Mori, Hamaguchi, Kim, and Wang, as modified with Tyler do not disclose “The print buffer unit, wherein the print buffer unit is driven by a portable power source.” However AAPA discloses “The print buffer unit, wherein the print buffer unit is driven by a portable power source.” (**AAPA, Specification page 1 lines 15-16**) It would have been obvious to one ordinary skilled in the art at the time of the invention to combine the teachings of Mori, Hamaguchi, Kim, and Wang, as modified with Tyler, with the teachings of AAPA since they are both analogous in power driven device related field. One ordinary skilled in the art at the time of the invention would have been motivated to combine the teachings of Mori, Hamaguchi, Kim, and Wang, as modified with Tyler, with the teachings of AAPA in order to provide a DC back-up power to the devices.

Response to Arguments

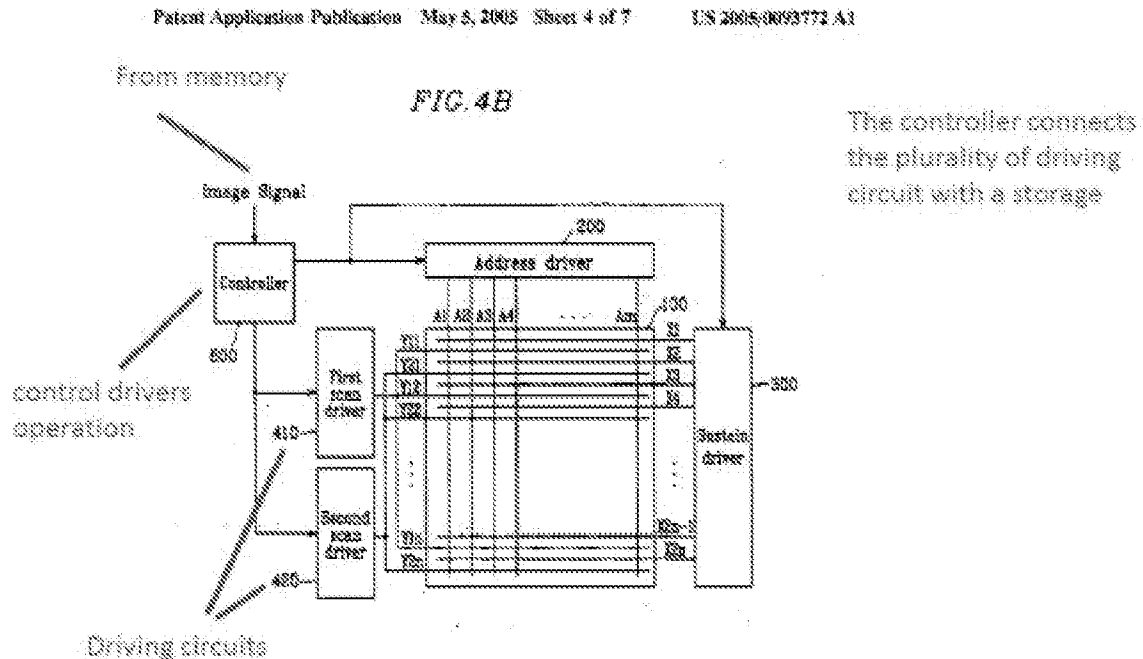
Applicant's arguments filed 04/14/2011 have been fully considered but they are not persuasive.

On page 12 of applicant's response, applicant argues that “Amended independent Claims 1, 15, and 16 each recite, in part and with reference to Figure 5 for example, a print-image displaying section 40 includes "a selector switch [44] configured to connect any one of the plurality of first driving circuits [43] to the band-data storing part [45]" (emphasis added).” is not disclosed by the teachings of Chang.

This feature as it is stated was added through amendment to overcome the teachings of

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Chang. However, Kim does disclose a controller connecting a memory and scan drivers as recited above. See figure below.



Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARTIN MUSHAMBO whose telephone number is (571)270-3390. The examiner can normally be reached on Monday - Friday / 7:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benny Q. Tieu can be reached on (571) 272-7490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/M.M/
9/11/2011

/Benny Q Tieu/
Supervisory Patent Examiner, Art Unit 2625